

CLAIMS

1. A glow plug (20) for an internal combustion engine (110) essentially comprising:
 - 5 - a body (27) intended to be fixed to the engine, and
 - a core (29) extending in a direction of elongation (11), connected to the body and intended to extend inside the combustion chamber (9) of the engine, and
 - 10 - measurement means (200, 55, 65) intended to determine the pressure internal to the combustion chamber (9) through the displacement of the core (29) under the effect of said pressure,
 - 15 characterized in that the glow plug is equipped with means (50, 60) that make it possible to quantify the displacement of the core with respect to the cylinder head (5) of the engine on which the glow plug is installed.
2. The glow plug as claimed in claim 1, characterized in that the means (50, 60) making it possible to quantify the displacement of the core with respect to the cylinder head are yokes secured to the cylinder head (5) at one of their ends.
- 25 3. The glow plug as claimed in claim 2, characterized in that yoke (50, 60) is screwed to the cylinder head (5).
- 30 4. The glow plug as claimed in claim 2, characterized in that the yoke (50, 60) is welded to the cylinder head (5).
- 35 5. The glow plug as claimed in any one of the preceding claims, characterized in that the measurement means (200, 55, 65) are placed between

the yoke (50, 60) on the one hand, and a part (57) integral with the core (29) of said glow plug (20).

5 6. The glow plug as claimed in any one of the preceding claims, characterized in that the measurement means (200, 55, 65) comprise at least one tubular piezoelectric element (45) extending around the core in the direction of elongation
10 between a first end and a second end, said tubular piezoelectric element being connected to the core at the first end (200a) and to the cylinder head (5) via a yoke (50, 60) at the second end (200b).

15 7. A vehicle equipped with a propulsion unit (1) comprising:

- a glow plug (20) as claimed in any one of the preceding claims,
- an internal combustion engine (110) having a combustion chamber (9) and on which said glow plug is mounted,
- fuel-injection means (130) for injecting fuel into the combustion chamber of the engine,
- processing means (4) for processing the information acquired by the measurement means,
25 in which the processing means (4) control the injection means (130) on the basis of the information acquired by the measurement means (200, 55, 65) in the course of one combustion cycle.
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8. The vehicle as claimed in claim 7, characterized in that the processing means (4) comprise a high-frequency filter to eliminate information relating to the vibration of the core with respect to the cylinder head.

35 9. The vehicle as claimed in claim 7 or claim 8, characterized in that the processing means compare the information transmitted by the measurement

means in the course of one cycle with reference values and control the injection means on the basis of this comparison.

5 10. The vehicle as claimed in any one of the claims 7 to 9, characterized in that it comprises an engine of the diesel type.